MODIS Technical Team Meeting
Thursday, August 9, 2001
3:00 PM

Vince Salomonson chaired the meeting. Present were Eric Vermote, Ed Masuoka, Dorothy Hall, Bill Barnes, Gary Alcott, Barbara Conboy, Mark Domen, Jack Xiong, Skip Reber, Chris Justice, and Wayne Esaias, with Rebecca Lindsey taking the minutes.

1.0 Schedule of Upcoming Events

· MODIS Science Team Meeting — September 24-26, 2001
Location: BWI Marriott

*** On-line registration due date — September 2, 2001

http://modis.gsfc.nasa.gov/MODIS/SCITEAM/200101/regform.html

2.0 Meeting Minutes

2.1 Instrument Update

Aqua

Domen reported that the spacecraft is in the thermal vacuum chamber. They are connecting the ground support equipment, doing electrical checkouts, putting in targets and doing alignments. There are more mechanical things to install, and the electrical tests must be finished before the thermal vacuum cycle. Pump down should start on the 18th of August, and it the thermal vacuum test has a 38-day schedule. Salomonson reported that Phil Sablehaus indicated it could be ready for launch by late January if all goes well in the test.

Barnes reported that Terra MODIS seems fine. MCST has put in a new LUT, and another one is due next week that accommodates the gain change in Band 5. There will be at least one more LUT for when they turn the thermal leak correction back on. These are all software corrections, which means we could go back to July 2 and reprocess in order to achieve consistency.

Barnes also reported that SBRS might need help running thermal vacuum tests, and MCST is going to send some people out to CA.

Barnes reported that initial tests of the software for the SWIR cross-talk correction seems to take about 50% more time to produce the L1B than the than the current code. This is without optimizations. If we implement the algorithm right now, the time required to process 1B would go up about 50%. This is an empirical correction, and it is fairly complicated. So if we decide to do this cross talk correction for Bands 5, 6, 7 and 21, we will have some overhead to consider. Vermote commented that it might all wash out in the total number of cycles once the code is in operations.

Justice asked about the Ocean team's investigation of the A-side/B-side comparison. Esaias said that SST looks reasonable, but they don't have any visible data yet. Detector

normalization and mirror side normalization look good, but since they haven't seen the visible, they just don't know.

Vermote said that as far as the current MCST corrections were concerned, his initial tests indicated that they were reasonable. He compared aerosol optical thickness (AOT) derived using the wrong LUT (i.e., the B-side LUT/A-side data) to the AOT derived using the new LUT (i.e. the new A-side LUT/A-side data). The results were what he expected: the new LUT is better, which indicated that MCSTs corrections are reasonable. He asked Xiong when MCST expects to turn on the thermal leak correction. Xiong said in a couple weeks. Vermote said he would like to see some data from that either before they put the corrected LUT in or in parallel to putting it in.

Esaias asked whether Xiong thought the old B-side coefficients would work if we went back to B-side loads. Xiong thought so, but, of course, they would have to check that out. Justice asked what the implications for consistent year were. Esaias said that if the visible data looks as good as the thermal appears to, and they don't have to renormalize, then the only implication is the noisy data and the hairy histograms, and the three weeks of missing data from when MODIS was down. He indicated that it doesn't look like there will be a step function in the time series.

2.1 Data Processing

Alcott reported that despite the Distributed Computing Environment problems the DAAC has been seeing, they still did 1X yesterday, August 8. Salomonson asked about forced upgrades or modifications that were pending, and Alcott said he thought the only thing they have to do is in the December time frame—and upgrade of some software packages that won't be supported past the end of the year. Salomonson asked where the current operational status put them as far as meeting the new processing strategy, which is to finish March, April and May of 2001 by September 21. Alcott said they must process at 1.13x to meet that goal.

Alcott said that there are numerous little issues that have to be shaken out, most notably the ingest problem with S4P and also how the buffer does clean up. He thinks it might be a few weeks until they are back to normal. Yesterday they saw rates of about 3X as ingest was able to feed S4PM properly.

Masuoka reported that on MTVS2, they have received through day 97 from the DAAC. They are stuck on one granule on day 94, which is keeping them from doing the Oceans sliding window. Other than that they are in pretty good shape. On MTVS1, they are waiting for four granules on day 161 in order to be able to finish that 8-day period.

Justice asked whether when MODAPS puts in requests for files that is needs for production (like the day 161 granules mentioned above), it is possible to set that as a higher priority than distribution to the community. Alcott said that once it is in the queue, you couldn't change the priority. Masuoka suggested we temporarily look at some sort of manual workaround.

Salomonson raised the issue of separate Aqua and Terra data streams. Masuoka indicated that he is convinced that is the way it should be. He said it could streamline things for the software integration team, and they just have to do the initial work of setting up the separate streams. He also indicated that the developers would have to make two separate deliveries if they want to change both Terra and Aqua code. Esaias asked if there are separate databases. Masuoka said yes.

Salomonson asked about keeping the L1B separate as well. Xiong said that although you could use same code and have it draw on separate LUTs, it would probably still be better to have two separate streams for Aqua and Terra L1. Esaias asked about ESDT implications, and Masuoka said there were none as far as he knew.

There was a discussion of the impact of distribution on production. There is a conflict there because as distribution increases, especially if it jumps significantly, then production is slowed. Reber said that if distribution is still running at about 10% (to the community) it would seem like the effect on production should be negligible.
Alcott said that the impact was really due to the combined effort of pushing to community and to MODAPS. As the DAAC's X-rate increases, the rate out to MODAPS increases. Then what MODAPS pushes back also increases, and that is a lot of volume.

Reber asked then, about the impact of greater user interest in the products. If we begin advertising these three months, and demand steps up dramatically, would production be seriously impacted? Alcott said yes, if demand for distribution were great enough. Reber said the system could find itself in a self-limiting situation. Justice indicated that the potential problem was another indication that we really need to consider how we package our data, and send out only exactly what our users need, and not bog them and the distribution system down with stuff they don't need. Hall commented that if we find ourselves in a situation where production is hampered by distribution, we ought to be able to make a strong case for resources for system upgrades.

Justice raised the issue of the impacts of code changes on production, and he indicated that he wanted to be clear about the kind of changes that really perturb the production system hamper production. His understanding was that it was things like changes in production rules, or changes that break the system, which then require production to stop or data to be reprocessed. He felt that the team should develop a typology based on the changes described above. And then some changes could just go through, while others would have to be scrutinized more closely. In particular requests to go back an reprocess data based on the new code should be considered carefully, and also there should be an understanding that if the new code is broken, then MODAPS would simply put in the old code and continue producing data. He indicated that the discipline data people should have an opportunity to vet any proposed changes and make sure they agree that the change is really the type the developer claims it is.

Justice said that he thought is was very reasonable to ask for more resources for developing a test system to run alongside the production system so that code changes could be checked out. Esaias countered that it would be better to have greater X in the

production system overall, and then devote a set schedule for testing. If the test system doesn't really simulate the production system (which a small system might not), then it doesn't really help.

2.3 Conclusion
Hall reported that they are getting ready for and ad hoc advisory meeting on October 31, and she is re-doing the ATBD. In addition they are updating their web pages.

Conboy reported that Procurement will be working on the bilateral 3-month university PI contract extensions and they should be done in about 2 weeks. It will be for 3 months initially, and then an additional three months if necessary.

3.0 Action Items

3.1 Discipline leads to meet to resolve the issue of beta-release code and science-quality code, and what we need to say about it.

Status: Open.

3.2 Technical team to discuss further the issue of predicted ephemeris data and how to improve it.

Status: Open.